

WHAT WE CLAIM IS:

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1 1. An adsorbent for removing low and/or very  
2 low density lipoprotein from body fluid in extracorporeal  
3 circulation treatment, which comprises a water-insoluble  
4 porous hard gel with exclusion limit of  $10^6$  to  $10^9$   
5 daltons on which a sulfated compound is immobilized by a  
6 covalent linkage.

sub A'

1 2. The adsorbent of Claim 1, wherein said  
2 water-insoluble porous hard gel is a water-insoluble  
3 porous polymer hard gel.

1 3. The adsorbent of Claim 2, wherein said  
2 water-insoluble porous polymer hard gel is a porous  
3 cellulose gel.

1 4. The adsorbent of Claim 1, wherein said  
2 water-insoluble porous hard gel is a porous inorganic  
3 hard gel.

1 5. The adsorbent of Claim 4, wherein said  
2 water-insoluble inorganic hard gel is a member selected  
3 from the group consisting of porous glass, porous silica  
4 gel and porous alumina.

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1 6. The adsorbent of Claim 1, wherein said  
2 sulfated compound is a compound obtained by sulfation of  
3 a hydroxy-containing compound.

a 1 6A. The adsorbent of Claim 6, wherein the  
2 sulfated compound is a sulfated carbohydrate.

1 7. The adsorbent of Claim 6, wherein the  
2 sulfated carbohydrate is a sulfated saccharide.

1 8. The adsorbent of Claim 7, wherein the  
2 sulfated saccharide is a sulfated polysaccharide.

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10. The adsorbent of Claim ~~9~~<sup>8</sup>, wherein the  
sulfated polysaccharide is a member selected from the  
group consisting of heparin, dextran sulfate, chondroitin  
sulfate and salts thereof.

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11. The adsorbent of Claim ~~10~~<sup>9</sup>, wherein the  
dextran sulfate, a salt thereof or a mixture of the  
dextran sulfate and the salt has an intrinsic viscosity  
of not more than 0.12 dl/g and a sulfur content of not  
less than 15 % by weight.

a 11  
12. The adsorbent of Claim ~~11~~<sup>1</sup>, wherein the  
sulfated compound is a sulfated polyhydric alcohol.

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13. The adsorbent of Claim 1, wherein the  
exclusion limit is  $10^6$  to  $10^8$  daltons.

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14. The adsorbent of Claim 1, wherein said  
sulfated compound is immobilized in an amount of 0.02 to  
100 mg/ml of bed volume.

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15. The adsorbent of Claim ~~14~~<sup>13</sup>, wherein the  
sulfated compound is immobilized in an amount of not less  
than 0.2 mg/ml of bed volume.

claim 15  
16. A process of preparing an adsorbent for  
removing low and/or very low density lipoprotein from  
body fluid in extracorporeal circulation treatment  
comprising a water-insoluble porous hard gel with  
exclusion limit of  $10^6$  to  $10^9$  daltons on which a sulfated  
compound is immobilized, wherein said water-insoluble  
porous hard gel is reacted with epichlorhydrin or a  
polyoxyrane compound to introduce epoxy groups on to the  
gel, and then the resulting epoxy-activated gel is  
reacted with the sulfated compound.

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17. The process of Claim ~~16~~<sup>15</sup>, wherein said  
water-insoluble hard gel is a water-insoluble porous

3 polymer hard gel.

1 <sup>17</sup>~~18~~. The process of Claim <sup>16</sup>~~17~~, wherein said  
2 water-insoluble porous polymer hard gel is a porous  
3 cellulose gel.

1 <sup>18</sup>~~19~~. The process of Claim <sup>15</sup>~~16~~, wherein said  
2 sulfated compound is dextran sulfate, a salt thereof or a  
3 mixture of the dextran sulfate and the salt; said dextran  
4 sulfate, the salt thereof or the mixture of the dextran  
5 sulfate and the salt being reacted with the epoxy-  
6 activated gel in a concentration of not less than 3 % by  
7 weight based on the weight of the whole reaction system  
8 excluding the dry weight of the porous hard gel.

1 <sup>19</sup>~~20~~. The process of Claim <sup>18</sup>~~19~~, wherein the porous  
2 hard gel is a porous cellulose gel.